

REMARKS

Favorable reconsideration of this Application and the Office Action of July 20 2005 are respectfully requested in view of the following remarks.

Original claims 1 to 79 remain under consideration in this application.

In the previous response Claim 59 was incorrectly identified as a "currently amended " claim, when in fact it is an original claim.

It is noted with appreciation that Examiner Chu has indicated Claims 1 to 11 and claims 60-79 are allowed.

It is further noted with appreciation that Examiner Chu has indicated that claims 21, 24, 27, 28, 34, 35, 41, 42, 45-48, 52, 53 and 56-59 are drawn to allowable subject matter, but are objected to as being dependent from a rejected base claim, and would be allowed if written in independent form including all the limitation of the base and any intervening claims. It is respectfully submitted that the base claim is allowable for at least the reasons set forth hereafter and it is therefore unnecessary to write these claims in independent form.

Additionally, Applicant notes the following. Claims 1 to 11 and 60 to 79 have been allowed because of the novelty and unobviousness of the polybenzoxazole precursor polymers of Structure (I) to which these claims 1-11 are directed and which form a part of the compositions recited in claims 60-79—as stated in paragraph 5 of the Office Action. Thus, any resin composition claims of resin composition claims 12-37, any process claims of process claims 38-48, and any substrate claims of substrate claims 49-59, that require the presence of the novel and unobvious polybenzoxazole precursor polymer of structure (1) are also to be considered novel, unobvious and therefore patentable. In part, due to the readily apparent correctness of this previous sentence, Examiner Chu has kindly indicated that claims 21, 24, 27, 28, 34, 35, 41, 42, 45-48, 52, 53 and 56-59 are drawn to allowable subject

matter. However, such listing of allowable claims is incomplete. Claims 23, 26, 29, 30, 37, 42, 43 and 54 all require the presence of the polybenzoxazole precursor polymer of Structure (I) of allowed claim 1 and therefore these claims should also have been indicated to be drawn to allowable subject matter. Claim 23 requires that the at least one polybenzoxazole precursor polymer be a polymer of Structure (I), i.e., a polymer of allowed claim 1 and is therefore drawn to allowable subject matter. Claims 26, 29, 30, 37, 43 and 54 are dependent directly or indirectly upon this claim 23. Thus, all these claims (Claims 26, 29, 30, 37, 43 and 54) are also drawn to allowable subject matter. Claim 28 is one of the claims indicated by Examiner Chu to be allowable. Claim 42 is dependent of said allowable claim 28 and is therefore also drawn to allowable subject matter. Thus, insofar as the prior art rejections of paragraphs 3 and 4 of the July 20, 2005 Office Action have been applied to these claims 23, 26, 29, 30, 37, 42, 43 and 54, those rejections are erroneous and Applicant respectfully requests the PTO to reconsider and withdraw those rejections insofar as they are applied to these claims 23, 26, 29, 30, 37, 42, 43 and 54. This point was made in the previous response filed in May 2005 and the PTO apparently overlooked or paid no attention to these facts and made no comments with respect thereto in the July 20th Office Action. Therefore, the PTO is respectfully consider the fact that claims 23, 26, 29, 30, 37, 43 and 54 are require the presence of the novel and unobvious polymer of structure (I) of allowed claim 1 and are also drawn to allowable subject matter and, in view of that, indicate that claims 23, 26, 29, 30, 37, 43 and 54 are also allowable.

The rejection of claims 12-20, 22, 23, 25, 26, 29-33, 38-40, 43, 44, 49-51, 54 and 55 under 35 U.S.C. 102(b) as being anticipated by US Patent No. 6,376,151 B1 to Takahashi et al. or US Patent No. 5,376,499 to Hammerschmidt et al. in view of US Patent 6,071,151 B1 to Horano et al. is respectfully traversed. As stated above, this rejection is clearly erroneous as applied to claims 23, 26, 29, 30, 43 and 54 since these claims require the presence of the novel polymer of Structure (I) of allowed claim 1.

The USPTO rejection of the claims under this rejection is based on the

contention that Takahashi et al. discloses end-capped polymers of Structure (III) in compositions with diazoquinone photoactive compounds. It is then contended that the photoactive diazoquinone compound at column 6, lines 45-47 suggest the use of the "same" photoactive compounds recited in Applicant's claim 12, formula V structure. Firstly, in order for the photoactive compounds of Applicant's Formula V to be the same or like that disclosed at col. 6, lines 45-47 of Takahashi et al. it would be necessary for one of R⁴, R⁵ or R⁶ of said Formula V to be phenyl. However, no one of R⁴, R⁵ or R⁶ can be phenyl. See the definition of these R's in the claim. Perhaps the PTO has misconstrued, confused or inadvertently misread the definition of these radical as possible being phenyl, instead of phenyl substituted C₁-C₄ alkyl as clearly stated in the claims.

Also, the photoactive compounds of this prior art patent are ones having benzylic hydrogens, whereas the photoactive compounds of applicant's claims do not have benzylic hydrogens-see paragraph [0040]. There is nothing in this cited Takahashi et al. patent to indicate that the patentee had a recognition or appreciation of the problem of providing polybenzoxazole precursor photosensitive compositions capable of curing to high temperature resistant features, **which will not substantially darken during typical cure temperatures employed, or how to accomplish the solution to that problem.** The compositions of the present Application claims are characterized by the fact that the **photosensitive compounds employed lack benzylic hydrogens** on the photosensitive compounds (PAC's). There is no such disclosure in the cited patent or even a recognition of the problem, nor would it have been obvious from the disclosure in Takahashi et al. that such a problem of darkening on curing of polybenzoxazoles precursor polymers would or could be accomplished with the photoactive compounds of Applicant's claim 12.

The Office Action relies upon the Hammerschmidt et al. patent for its disclosure of compositions of end capped polyhydroxypolyamide precursors with a diazoquinone photoactive compound, relying upon the disclosure at col. 5, lines 57-68. This disclosure only relates to known diazoquinone compounds of the type in EP 023 662, which are based on the backbone bisphenol A (beta, beta bis(4-hydroxyphenyl)propane). However, such

diazoquinone compounds are not within the scope of the photoactive compounds of Applicant's claim 12. Thus, the combination of this disclosure with that in Takahashi et al. does not lead to the claimed invention.

Moreover, as stated herein before, the photoactive compounds of Applicant's claims do not have benzylic hydrogens. There is nothing in this cited Hammerschmidt et al. patent to indicate that the patentee had a recognition or appreciation of the problem of providing polybenzoxazole precursor photosensitive compositions capable of curing to high temperature resistant features, **which will not substantially darken during typical cure temperatures employed, or how to accomplish the solution to that problem, i.e., by the use of photoactive compounds devoid of benzylic hydrogens.** The compositions of the present Application claims are characterized by the fact that the **photosensitive compounds employed lack benzylic hydrogens** on the photosensitive compounds (PAC's). There is no such disclosure in the cited Hammerschmidt et al. patent or even a recognition of the problem, nor would it have been obvious from the disclosure in Hammerschmidt et al. that such a problem of darkening on curing of polybenzoxazoles precursor polymers would or could be accomplished with the photoactive compounds of Applicant's claim 12. For this reason, the combination of Takahashi et al. and Hammerschmidt et al. (neither of which discloses photosensitive compounds within the scope of Applicant's claims) does not and cannot render the claimed invention obvious to one skilled in the art under 35 U.S.C. 103.

The Office Action recognizes and states that the Takahashi et al. and Hammerschmidt et al. patents **lack** a specific disclosure for the specific silane adhesion promoting agent disclosed in claims 32-33. In view of this deficiency in these primary patent disclosures, the PTO relies upon the disclosure in Hirano et al. as disclosing organosilane compounds and contends that it would be obvious to one skilled in the art to add an organosilane agent as taught by Hirano et al. as an adhesion promoter and reasonably expect same or similar results as disclosed in Takahashi et al. and Hammerschmidt et al. Takahashi et al. and Hammerschmidt et al. do not disclose compositions with the non-

polymeric photosensitive compounds required by section (b) of claim 12. Thus, when an adhesion promoter of Hirano et al. is employed in the compositions of either Takahashi et al. or Hammerschmidt et al. (as suggested by the PTO in the Office Action) compositions of Applicant's claims do **NOT** result because of the hereinbefore pointed out deficiencies in those two primary references with respect to the photoactive compounds required by Applicant's claims. Since the disclosure in Hirano et al. cures none of the deficiencies of the Takahashi et al. or Hammerschmidt et al. patent disclosures, their combination with Hirano et al. does not and cannot render the claimed invention obvious to one skilled in the art under 35 U.S.C. 103.

Therefore, the PTO is respectfully requested to reconsider and withdraw the 35 U.S.C. 103 rejection of claims 12-20, 22, 23, 25, 26, 29-33, 38-40, 43, 44, 49-51, 54 and 55 over these references for the reasons stated herein before.

It is respectfully submitted that the foregoing is a full and complete response to the Office Action and that the claims are allowable. An early indication of their allowability by issuance of a Notice of Allowance is earnestly solicited.

Respectfully submitted,

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